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Morbidity and Mortality Weekly Report

U. S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

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Prepared by the COMMUNICABLE DISEASE CENTER 634-5131

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PROVISIONAL INFORMATION ON SELECTED NOTIFIABLE DISEASES IN THE UNITED STATES AND ON DEATHS IN SELECTED CITIES FOR WEEK ENDED JANUARY 4, 1964

BOTULISM SURVEILLANCE SUMMARY ISSUE

POLIOMYELITIS – No cases of poliomyelitis were reported for the week ended January 4.

This represents **the first time** that **no cases** have been reported for any week since reporting began, according to the statistical records available at the Communicable Disease Center. Weekly reporting of poliomyelitis began in 1950.

The greatest number of cases reported for any one week was 4,180 for the 38th week (ended September 20) of 1952. The highest number of cases reported for the comparable first week of any year since 1950 was 253 in 1953.

DIPHTHERIA – Eight cases of diphtheria were reported for the week ended January 4, the first week of 1964 totals.

Four of these cases were reported from Kansas. They occurred in 4 children of one family. Three of the children had not received immunization; one was inadequately vaccinated.

Possible indirect contact with an outbreak in Oklahoma (See MMWR, Vol. 12, p. 421) is under investigation, according to Dr. Don E. Wilcox, State Epidemiologist, Kansas State Board of Health. A full epidemiologic report will be included in a future issue.

Table 1. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES

(Cumulative totals include revised and delayed reports through previous weeks)

Disease	1st Week Ended			Cumulative, First Week		
	January 4, 1964	January 5, 1963	Median 1959 - 1963	1964	1963	Median 1959 - 1963
Aseptic meningitis	17	14	---	17	14	---
Brucellosis	3	3	9	3	3	9
Diphtheria	8	3	19	8	3	19
Encephalitis, primary infectious	11	] 8	---	11	] 8	---
Encephalitis, post-infectious	5		---	5		---
Hepatitis, infectious including serum hepatitis	598	691	691	598	691	691
Measles	2,938	4,822	6,261	2,938	4,822	6,261
Meningococcal infections	33	46	46	33	46	46
Poliomyelitis, Total	-	1	8	-	1	8
Paralytic	-	1	3	-	1	3
Nonparalytic	-	-	---	-	-	---
Unspecified	-	-	---	-	-	---
Streptococcal Sore Throat and Scarlet fever	6,789	5,934	---	6,789	5,934	---
Tetanus	2	3	---	2	3	---
Tularemia	9	7	---	9	7	---
Typhoid fever	2	2	6	2	2	6
Rabies in Animals	48	42	55	48	42	55

Table 2. NOTIFIABLE DISEASES OF LOW FREQUENCY

	Cum.		Cum.
Anthrax:	-	Psittacosis:	-
Botulism:	-	Rabies in Man:	-
Leptospirosis:	-	Smallpox:	-
Malaria: Alaska - 1, Colo. - 1, Va. - 2	4	Typhus-	
Plague:	-	Murine:	-
		Rky Mt. Spotted:	-

CASES OF TYPE E BOTULISM
COMMERCIALLY PROCESSED SMOKED WHITEFISH CHUBS
Tennessee, Alabama, and Kentucky

Cases	Age	Sex	Date fish eaten	No. fish eaten	Hours to onset of GI symptoms	Hours to onset of neurological symptoms	Received type E antitoxin?	Severity
Knoxville, Tennessee								
Family A								
Case 1	32	M	10-5	1/2	7	7	No	Death, 10-7-63
Case 2	10	F	10-5	1/2	8	19	No	Death, 10-7-63
Family B								
Case 3	42	M	10-2	1/2	12	108	Yes	Severe; required tracheostomy
Case 4	41	F	10-2	1/2	12	–	Yes	Mild
Family C								
Case 5	39	F	10-6	1/3	7	–	Yes	Mild
Case 6	8	F	10-6	1/3	7	26	Yes	Severe; rapid recovery after antitoxin
Case 7	10	M	10-6	1/3	7	26	Yes	Severe; rapid recovery after antitoxin
Nashville, Tennessee								
Case 8	53	M	10-6	1	13	15	Yes	Moderately severe
Case 9	37	M	9-28	1	16	20	No	Death, 9-30-63
Case 10	54	M	10-4	2	17	90	Yes	Severe; required tracheostomy and tank respirator; developed pneumonia and gram-negative sepsis
Case 11	52	F	10-5	3	–	15	No	Death, 10-6-63
Case 12	47	M	9-28	1-3/4	16	16	No	Death, 10-5-63
Huntsville, Alabama								
Case 13	5	M	10-4	2/5 of 3*	32	24	Yes	Severe; required tracheostomy and tank respirator
Case 14	54	F	10-4	1-1/2	17	17	Yes	Mild
Case 15	52	F	10-6	1	15	65	No	Mild, not hospitalized
Madisonville, Kentucky								
Case 16	64	F	10-5	4-1/2	18	25	No	Mild, not hospitalized
Case 17	65	M	10-5	1-1/2	78	85	No	Mild, not hospitalized

Mean – 17.6 hours. Mean – 37.2 hours.
*Three fish chopped, mixed and served as a single dish.

(Data submitted by Dr. Cecil B. Tucker, Director, Division of Preventable Diseases, Tennessee Department of Public Health; Dr. W. H. Y. Smith, Director, Bureau of Preventable Diseases, Alabama State Health Department; and Mr. J. Clifford Todd, State Epidemiologist, Kentucky State Department of Health)

EPIDEMIOLOGICAL REPORTS

Botulism – Colifornio – Figs

The two cases of botulism reported last week from California were related to the ingestion of home processed figs. (See MMWR, Vol. 12, p. 437.)

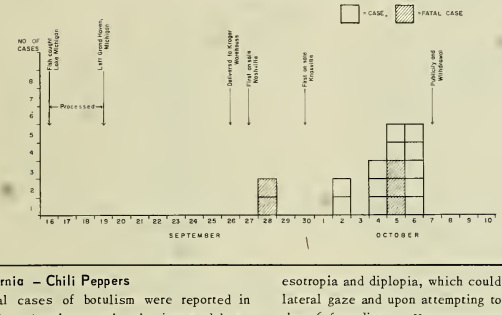
In early October, a dentist and his wife received home preserved figs from their maid. During the morning of October 18, the dentist ingested some figs. On October 20, he experienced generalized weakness while working at his desk. The following day he noted worsening diplopia, dysphagia, and weakness of his neck musculature. When hospitalized October 23, his physician noted definite dysarthria. A lumbar puncture, performed at that time because the patient showed no signs of improvement, was normal. On October 25, the diagnosis of botulism was made. The patient was treated with 50,000 units of bivalent (A&B) antitoxin administered over a two-day period. Despite this therapy, the patient died November 3.

The patient's wife ate figs from this same jar on October 16. On October 18, she began to experience generalized fatigue and the following day dysphagia and dysarthria. On October 20, she noticed bilateral ptosis and worsening of her generalized weakness. Her dysphagia and dysarthria became more severe. On October 23, because of the persistence of her symptoms, she was admitted to the same hospital where her husband was a patient. Although she was not treated with antitoxin, she gradually improved and has survived.

The figs had been home preserved by the dentist's maid. The jar from which the figs were consumed by the dentist and his wife was discarded and could not be recovered. Figs examined in the remaining jars were negative for *Clostridium botulinum* or its toxin. The maid consumed figs from another jar and never experienced symptoms.

(Reported by Dr. Philip K. Condit, Chief, Bureau of Communicable Diseases, California State Department of Health.)

Editor's Note: Figs have been implicated in at least 11 earlier outbreaks of botulism, according to "Fifty years of Botulism in the United States and Canada" by K. F. Meyer, M.D., and B. Eddie, D.P.H. These 11 outbreaks have resulted in 22 cases, including 12 deaths. Eight of these outbreaks occurred in California, and one each in Connecticut, District of Columbia, and Maryland. Two of the California outbreaks were due to Type A botulinus toxin; the Connecticut and Maryland outbreaks were due to Type B. The specific type in each of the other outbreaks was unknown.



Botulism – California – Chili Peppers

Two non-fatal cases of botulism were reported in early 1963 in a Los Angeles couple who ingested home canned chili peppers. This is a delayed epidemiological report.

Upon awakening January 27, 1963, a 39-year-old Mexican female complained of double vision and a swollen tongue, but she continued performing her usual household chores. The following morning she had difficulty swallowing, and temporal and occipital headache. She vomited once. Her family physician prescribed symptomatic therapy. That evening she commenced to experience epigastric pain and respiratory difficulty and was hospitalized. At no time did she have diarrhea or sensory changes.

On physical examination, she was found to have ptosis and bilateral facial paralysis, as well as weakness of the right medial rectus without obvious strabismus. Pharyngeal pooling of saliva and difficulty of swallowing were present; she could not extrude her tongue. There was moderate trismus. Her temperature was 100°F.

On January 29, she received 40,000 units of bivalent (A&B) botulinus antitoxin intravenously. A tracheostomy was also performed because of increasing respiratory difficulty; the patient was placed in a respirator. On January 31, urinary retention developed, requiring an indwelling catheter. On the same day, her temperature rose to 101°F. and a right upper lobe pneumonia was diagnosed clinically and confirmed by X-ray. The pneumonia responded to an antibiotic.

At the time of his wife's admission, the husband noted diplopia but was not hospitalized until urged to do so the following morning. Upon arising January 28, he first noted double vision when he attempted to focus on distant objects and on lateral gaze. He did not experience headache, blurred vision, weakness, ataxia, difficulty swallowing, respiratory difficulty, or fever. At the time of hospital admission, he was found to have a mild left esotropia and diplopia, which could be elicited on extreme lateral gaze and upon attempting to focus on objects more than 6 feet distant. He was treated with 20,000 units of bivalent antitoxin on January 29. Diplopia disappeared January 31.

A third family member, the 9-year-old son, was admitted for observation on January 29, although he had no complaints and a negative physical examination. He was treated prophylactically with 10,000 units of bivalent antitoxin; no symptoms developed during three days of observation. He was not officially recorded as a case.

Epidemiologic investigation revealed that the only home canned food item consumed during the previous week was a portion of a quart jar of chili peppers, which the mother had canned in September, 1962. She had placed the peppers in open jars, covered them with liquid, boiled them an indeterminate length of time, and sealed them. Four quarts had been prepared in this manner. One was the suspect jar; 2 had been consumed previously and one jar remained unopened. The 2 adults had eaten peppers from the fourth jar in an uncertain amount between January 21 and January 24. The wife had consumed more than the husband. The wife had eaten peppers at breakfast January 27. Her husband had not eaten peppers after January 24. The 9-year-old son disliked peppers and had eaten none. No other foods were ingested by both the mother and father and not by the son.

On laboratory examination, Type A botulinus toxin was demonstrated by the Los Angeles Health Department Laboratory from a sample of the remaining portion of the jar of chili peppers.

(Reported by Robert S. Rocke, M.D., District Health Officer; C. Carson, Assistant Epidemiologist; G. Kitaoka, P.H.N., Los Angeles County Health Department; and Dr. Philip K. Condit, Chief, Bureau of Communicable Diseases, California State Department of Health.)

TABLE 1
BOTULISM – 1963
U. S. A.

Outbreak	Cases	Deaths	Food	Type	Location	Processor	MMWR Reference Vol. 12
1	2	0	Chili Peppers	A	California	Non-commercial	This issue
2	2	0	Liver Paste	A	New York City	Commercial	pp. 357,386
3	1	1	Green Beans	B	West Virginia	Non-commercial	p. 311
4	5	1	Corn	B	Kentucky	Non-commercial	p. 322
5	2	1	Green Beans	B	Colorado	Non-commercial	p. 410
6	3	0	Green Beans	B	Pennsylvania	Non-commercial	p. 430
7	3	2	Tuna Fish	E	Michigan	Commercial	pp. 95,124
8	2	2	Smoked Whitefish	E	Michigan	Commercial*	pp. 329,337
9	17	5	Smoked Whitefish Chubs	E	Tennessee, Alabama, Kentucky	Commercial	pp. 329,337,345
10	6	1	Mushrooms	Unknown	California	Non-commercial	p. 322
11	1	0	Smoked Whitefish	Unknown	Minnesota	Non-commercial	p. 400
12	2	1	Figs	Unknown	California	Non-commercial	This issue
	46	14					

*See Commercial Section of Botulism Surveillance Summary.
Source: State Reports received by CDC.

BOTULISM SURVEILLANCE SUMMARY – 1963

A total of 12 outbreaks of botulism accounting for 46 cases, including 14 deaths, were reported in the United States during 1963 (Table 1). The 46 cases during 1963 represent the highest total for any one year since 1939, the eighth highest year since 1899 (Table 2). Commercially canned or smoked food products accounted for 4 outbreaks and 24 cases, and home canned food caused 8 outbreaks, 22 cases.

TABLE 2

CASES OF BOTULISM
HIGHEST YEARS 1899 – 1963

	Cases	Outbreaks	Year
1st	89	15	1919
2nd	71	26	1935
3rd	63	15	1921
4th	59	23	1922
5th	50	12	1924
6th	48	15	1931
7th	47	18	1939
8th	46	20	1932
8th	46	12	1963*
10th	44	15	1941

* Preliminary Total.

Source: 1899-1949 – "Meyer, K.F. and Eddie, B. "Fifty Years of Botulism in the United States and Canada," George Williams Hooper Foundation, University of California, San Francisco.

1950-1963 – State reports received by NOVS and CDC.

Cases by State

The 12 outbreaks recorded this year (See Table 1) occurred in 9 States. Tennessee, with 12 cases, experienced more cases of botulism than any other State. Tennessee's 12 cases were part of one outbreak, which also involved victims in Kentucky and Alabama, and was traced to smoked whitefish chubs. California was second with 10 cases, Kentucky third with 7 cases.

Outbreaks by State

Although California was second in total number of cases for the year, it led the States in the number of separate outbreaks. California experienced 3 outbreaks, while Kentucky and Michigan each had 2 separate outbreaks. Both of Michigan's outbreaks were related to commercial products.

Type

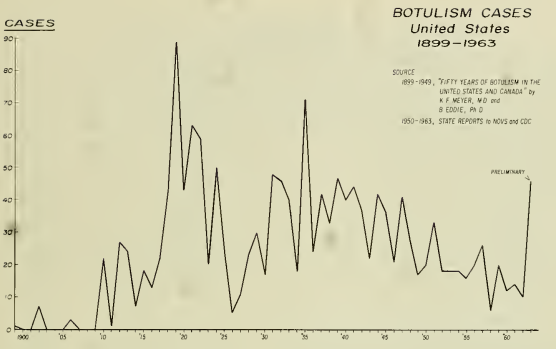
Type B *Clostridium botulinum* toxin was identified as the etiological agent in 4 of the 12 outbreaks (11 cases). Type E toxin was identified in 3 outbreaks (22 cases), Type A in 2 outbreaks (4 cases). In the remaining 3 outbreaks (9 cases), the type was unknown.

TABLE 3

1963 BOTULISM BY SPECIFIC TYPE

	Outbreaks	Cases	Deaths
Type A	2	4	0
Type B	4	11	3
Type E	3	22	9
Unknown	3	9	2
Total	12	46	14

Source: State reports received by CDC.



Vehicle

Vegetables were found to be the vehicle in 6 of the 12 outbreaks. Green beans accounted for 3 separate outbreaks, while chili peppers, mushrooms and corn accounted for one each.

Fish were implicated in 4 separate outbreaks. A smoked fish product was involved in 3 separate outbreaks, and a non-smoked fish product involved in the fourth outbreak. Of the 3 outbreaks related to smoked fish, 2 were from commercial sources.

Antitoxin Therapy

Of the 46 reported cases, 22 received botulinus antitoxin during the course of illness. Of the 14 fatalities, only 2 received antitoxin therapy; 20 of the 32 survivors were treated with the antitoxin. The number of fatal and non-fatal cases who did not receive botulinus antitoxin is presented in Table 4 below.

TABLE 4
1963 BOTULISM CASES AND ANTITOXIN THERAPY

Outbreak	Surviving Cases	Type Specific Antitoxin	Deaths	Type Specific Antitoxin
1 Chili Peppers	2	2	0	0
2 Liver Paste	2	0	0	0
3 Beans	0	0	1	0
4 Corn	4	4	1	0
5 Beans	1	1	1	0
6 Beans	3	3	0	0
7 Tuna Fish	1	0	2	1
8 Smoked Whitefish	0	0	2	0
9 Smoked Whitefish Chubs	12	8	5	0
10 Mushrooms	5	1*	1	0
11 Whitefish	1	1*	0	0
12 Figs	1	0	1	1*
Totals	32	20	14	2

*Responsible type unknown; Received Bivalent (A & B) Antitoxin
Source: State reports received by CDC.

Although these data might attest the value of antitoxin therapy, it has been repeatedly observed that fatal cases commonly demonstrate a shorter incubation period and often are diagnosed only posthumously after subsequent milder cases have occurred. Treated and non-treated cases are thus in no way comparable in severity.

Commercial

More cases of botulism were due to commercial products than home canned products during 1963.

Four of the 12 outbreaks involved commercial products; the remainder related to home preserved products. Commercial outbreaks involved 24 victims, 9 of whom died. In the non-commercial outbreaks, 22 individuals were concerned; 5 died.

TABLE 5
1963

	Outbreaks	Cases	Deaths
Commercial	4	24	9
Non-Commercial	8	22	5
Total	12	46	14

Source: State reports received by CDC.

Of the 4 commercial outbreaks in 1963, the first involved one can of tuna fish, processed in San Francisco and sold in Detroit. This can led to 3 cases, 2 of which were fatal. (See MMWR, Vol. 12, pp. 95, 124.) A Canadian canned liver paste product led to 3 cases of Type B botulism in Montreal, and 2 non-fatal cases of Type A botulism in New York City. (See MMWR, Vol. 12, pp. 357, 386.) Two outbreaks were due to smoked fish products.

TABLE 6
COMMERCIAL BOTULISM OUTBREAKS – U. S. A

Year	Food	Outbreaks	Cases	Deaths	Type
1906	Pork and Beans	1	3	3	–
1910	String Beans	1	4	4	–
1912	Clam Juice	1	2	1	–
1913	Clam Juice	1	3	2	–
1914	Clam Juice	1	2	2	–
1915	Tomato Catsup	1	2	0	–
	Sausage	1	2	2	–
1918	Corn	1	1	0	–
	Minced Olives	1	2	2	–
	Tuna	1	1	1	–
1919	Olives	2	28	17	A
	Summer Sausage	1	3	0	–
1920	Ripe Olives	1	7	1	A
	Ripe Olives	2	7	0	–
	Minced Olives	1	5	0	A
	Minced Olives	1	1	1	–
	Spinach	1	6	3	A
	Spinach	1	2	2	–
	Ham	1	4	4	–
	Milk	1	4	0	–
	Beans	1	5	5	B
1921	Spinach	1	32	4	A
	Ripe Olives	1	5	1	A
1922	Spinach	1	11	6	–
1924	Ripe Olives	2	12	4	–
	Ripe Olives	1	9	2	A
1925	Sardines	1	2	2	–
	Sardines	1	2	2	A
	Spinach	1	5	1	B
	Potted Meat	1	4	4	B
1929	Shellfish	1	2	1	B
1931	Antipasto	1	2	1	–
	Milk	1	1	0	A
	Sardines	1	2	1	–
1934	Sprats	1	3	1	E
1936	Clams (Japanese canned)	1	4	4	B
1938	Tuna	1	2	2	–
1961	Mushroom Sauce	1	3	1	E
1951	Cheese	1	1	1	–
1960	Smoked Cisco	1	2	2	E
1962	Tuna	1	3	2	E
	Smoked Whitefish	2	19	7	E
	Smoked Whitefish Chub	1	17	5	E
	Liver Paste	1	2	0	A
Total		51	219	109	

Source: 1899-1949 Meyer, K. F. and Eddie, B. "Fifty Years of Botulism in the United States and Canada," George Williams Hooper Foundation, University of California, San Francisco.
1950-1962 State reports received by MWS and COC

Two cases of Type E botulism from smoked whitefish occurred in Michigan at the same time as the outbreak from smoked whitefish chubs in Tennessee, Alabama, and Kentucky. (See MMWR, Vol. 12, pp. 329, 337, and 345.)

It is believed that the Michigan husband and wife purchased the suspect smoked whitefish from a commercial roadside stand while on a long weekend vacation in northern Michigan. This outbreak appears to be unrelated to the smoked whitefish chub outbreak in Tennessee, Alabama, and Kentucky, which was recognized a few days later. A revised epidemic curve and line listing of the 12 non-fatal and 5 fatal cases included in the smoked whitefish chub outbreak is presented on pages 2 and 3.

In past years, inadequately preserved home canned products have accounted for the vast majority of botulism cases. No explanation can be provided for the sudden occurrence of commercial outbreaks during 1963.

Since 1899, 51 outbreaks of botulism related to commercial products have been reported in the United States. Until 1963, all except two had occurred prior to 1942. Of the 51 outbreaks, 25 have been bacteriologically proved.

A complete list of known outbreaks of botulism related to commercial products is presented in Table 6.

Whereas 36 cases of proved Type E botulism had been described in the United States before 1963 (See Table 2), 22 cases of Type E occurred in 1963 alone. All cases of Type E during 1963 were related to commercial fish products (smoked whitefish, smoked whitefish chubs and tuna fish).

A complete table of known proven Type E outbreaks in the U.S.A. is presented below. This supersedes the table appearing on page 330 of Vol. 12.

KNOWN OUTBREAKS TYPE E BOTULISM

Year	State	Food	Cases	Deaths
1922	New York	Smoked Salmon (Canadian origin)	3	1
1934	New York	Sprats (German origin)	3	1
1941	California	Mushroom Sauce	3	1
1950	Alaska (Point Hope)	Beluga Flippers	5	0
1952	Alaska (Selawik)	Beluga Flippers	1	1
1956	Alaska (Kotzebue)	Beluga Muktuk	3	2
1956	Alaska (Anchorage)	Beluga Muktuk	2	1
1959	Alaska (Hydaburg)	Stink Eggs (Salmon eggs)	1	1
1959	Alaska (Seamman Bay)	Seal or Whale Flipper	7	1
1960	Alaska (Ketchikan)	Kendukon Salmon Egg Cheese	2	2
1960	Minnesota	Cisco – vacuum packed	2	2
1961	Washington	Uncooked Salmon Eggs	4	1
1963	Michigan	Tuna (California packed)	3	2
1963	Michigan	Smoked Whitefish	2	2
1963	Tennessee Alabama Kentucky	Smoked Whitefish Chubs (vacuum packed in Michigan)	17	5
		Totals	58	23

Source: Dr. C. E. Dolman, Professor and Head, Department of Bacteriology and Immunology, University of British Columbia, and K. F. Meyer, M.D., of the George Williams Hooper Foundation, University of California Medical Center, San Francisco, California.

California leads all other States in the number of outbreaks and cases over the past 64 years. The cumulative number of cases for each State since 1899 is shown below.

BOTULISM CASES – U. S. A.
TOTAL CASES – 1899 THROUGH 1963 BY DECADE

States	1899-1909	1910-1919	1920-1929	1930-1939	1940-1949	1950-1959	1960-1963	Total
California	11	104	87	105	109	50	12	478
Washington	0	23	43	46	30	19	8	165
Colorado	0	17	27	31	23	25	2	125
New Mexico	0	0	0	37	33	7	3	80
New York	0	18	21	19	12	0	2	72
Michigan	0	15	34	0	2	0	9	60
Oregon	0	3	18	20	12	3	0	56
Tennessee	0	0	7	15	6	5	15	48
Kentucky	0	0	0	11	11	11	10	43
Montana	0	7	5	17	3	2	0	34
North Dakota	0	0	0	21	9	0	0	30
Ohio	0	14	12	3	0	1	0	30
Wyoming	0	0	21	8	0	0	0	29
Nebraska	0	2	3	12	10	0	0	27
New Jersey	0	3	2	5	4	13	0	27
Idaho	0	4	2	8	0	6	3	23
Mississippi	0	0	0	0	4	17	0	21
Indiana	0	7	11	0	0	2	0	20
Pennsylvania	0	0	9	1	3	2	3	18
Illinois	0	4	4	0	2	6	0	16
Utah	0	1	0	1	12	0	0	14
Minnesota	0	0	0	5	0	3	5	13
Alaska*	0	0	0	0	0	10	3	13
Texas	0	0	6	4	0	1	0	11
Arizona	0	0	5	0	4	2	0	11
Virginia	0	0	0	2	5	2	0	9
Florida	0	7	0	0	0	0	1	8
Massachusetts	0	6	0	2	0	0	0	8
Maryland	0	0	0	0	4	3	0	7
Alabama	0	0	3	0	1	0	3	7
South Dakota	0	0	0	3	2	0	0	7
Nevada	0	0	0	0	3	3	0	6
Wisconsin	0	3	2	1	0	0	0	6
Oklahoma	0	0	0	2	1	3	0	6
Connecticut	0	0	0	1	4	0	0	5
Iowa	0	5	0	0	0	0	0	5
Maine	0	0	4	0	0	0	0	4
West Virginia	0	0	0	0	3	0	1	4
Louisiana	0	0	0	0	0	3	1	4
Washington, D. C.	0	0	0	0	3	0	0	3
Arkansas	0	0	0	2	0	0	1	3
Missouri	0	0	2	0	0	0	0	2
North Carolina	0	0	0	0	0	2	0	2
Georgia	0	0	0	0	1	0	0	1
Hawaii*	0	0	0	0	0	0	0	0
New Hampshire	0	0	0	0	0	0	0	0
Vermont	0	0	0	0	0	0	0	0
Rhode Island	0	0	0	0	0	0	0	0
Kansas	0	0	0	0	0	0	0	0
Delaware	0	0	0	0	0	0	0	0
South Carolina	0	0	0	0	0	0	0	0
Total	11	243	328	384	316	197	82	1561

*Since 1950 only.

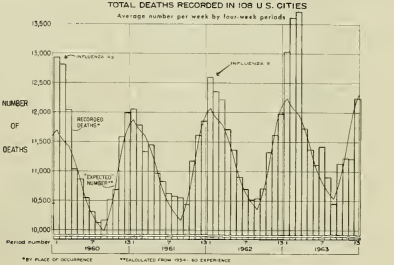
Source: 1899-1949 – Meyer, K. F. and Eddie, B. "Fifty Years of Botulism in the United States and Canada," George Williams Hooper Foundation, University of California, San Francisco.
1950-1963 – State reports received by NDVS and CDC.

TOTAL DEATHS REPORTED IN 108 CITIES

The weekly average number of total deaths in 108 cities for the four-week period ending January 4 was 12,249 as compared with an expected weekly average of 12,263.

Total Deaths Recorded in 108 United States Cities

	Week Ending				Week	Weekly
	12/14	12/21	12/28	1/4	Total	Average
Observed	12,434	11,873	11,541	13,148	48,996	12,249
Expected	12,151	12,235	12,306	12,360	49,052	12,263
Excess	283	-362	-765	788	-56	-14



(See Table, page 11)

Table 3. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES
FOR WEEKS ENDED
JANUARY 4, 1964 AND JANUARY 5, 1963 (1st WEEK)

Area	Aseptic Meningitis		Encephalitis									
			Primary	Post-Inf.	Poliomyelitis, Total Cases				Poliomyelitis, Paralytic			
							Cumulative				Cumulative	
	1964	1963	1964	1964	1964	1963	1964	1963	1964	1963	1964	1963
UNITED STATES...	17	14	11	5	-	1	-	1	-	1	-	1
NEW ENGLAND.....	-	-	-	-	-	-	-	-	-	-	-	-
Maine.....	-	-	-	-	-	-	-	-	-	-	-	-
New Hampshire.....	-	-	-	-	-	-	-	-	-	-	-	-
Vermont.....	-	-	-	-	-	-	-	-	-	-	-	-
Massachusetts.....	-	-	-	-	-	-	-	-	-	-	-	-
Rhode Island.....	-	-	-	-	-	-	-	-	-	-	-	-
Connecticut.....	-	-	-	-	-	-	-	-	-	-	-	-
MIDDLE ATLANTIC.....	1	-	5	2	-	-	-	-	-	-	-	-
New York City.....	-	-	2	-	-	-	-	-	-	-	-	-
New York, Up-State.	-	-	1	1	-	-	-	-	-	-	-	-
New Jersey.....	-	-	-	-	-	-	-	-	-	-	-	-
Pennsylvania.....	1	-	2	1	-	-	-	-	-	-	-	-
EAST NORTH CENTRAL...	-	1	-	1	-	-	-	-	-	-	-	-
Ohio.....	-	-	-	-	-	-	-	-	-	-	-	-
Indiana.....	-	-	-	-	-	-	-	-	-	-	-	-
Illinois.....	-	-	-	-	-	-	-	-	-	-	-	-
Michigan.....	-	-	-	1	-	-	-	-	-	-	-	-
Wisconsin.....	-	1	-	-	-	-	-	-	-	-	-	-
WEST NORTH CENTRAL...	-	1	1	-	-	-	-	-	-	-	-	-
Minnesota.....	-	1	-	-	-	-	-	-	-	-	-	-
Iowa.....	-	-	-	-	-	-	-	-	-	-	-	-
Missouri.....	-	-	-	-	-	-	-	-	-	-	-	-
North Dakota.....	-	-	-	-	-	-	-	-	-	-	-	-
South Dakota.....	-	-	1	-	-	-	-	-	-	-	-	-
Nebraska.....	-	-	-	-	-	-	-	-	-	-	-	-
Kansas.....	-	-	-	-	-	-	-	-	-	-	-	-
SOUTH ATLANTIC.....	1	7	1	1	-	-	-	-	-	-	-	-
Delaware.....	-	4	-	-	-	-	-	-	-	-	-	-
Maryland.....	-	-	-	1	-	-	-	-	-	-	-	-
Dist. of Columbia..	-	-	-	-	-	-	-	-	-	-	-	-
Virginia.....	-	3	1	-	-	-	-	-	-	-	-	-
West Virginia.....	-	-	-	-	-	-	-	-	-	-	-	-
North Carolina.....	-	-	-	-	-	-	-	-	-	-	-	-
South Carolina.....	-	-	-	-	-	-	-	-	-	-	-	-
Georgia.....	-	-	-	-	-	-	-	-	-	-	-	-
Florida.....	1	-	-	-	-	-	-	-	-	-	-	-
EAST SOUTH CENTRAL...	2	-	-	-	-	-	-	-	-	-	-	-
Kentucky.....	1	-	-	-	-	-	-	-	-	-	-	-
Tennessee.....	1	-	-	-	-	-	-	-	-	-	-	-
Alabama.....	-	-	-	-	-	-	-	-	-	-	-	-
Mississippi.....	-	-	-	-	-	-	-	-	-	-	-	-
WEST SOUTH CENTRAL...	-	-	-	-	-	-	-	-	-	-	-	-
Arkansas.....	-	-	-	-	-	-	-	-	-	-	-	-
Louisiana.....	-	-	-	-	-	-	-	-	-	-	-	-
Oklahoma.....	-	-	-	-	-	-	-	-	-	-	-	-
Texas.....	-	-	-	-	-	-	-	-	-	-	-	-
MOUNTAIN.....	1	1	1	-	-	-	-	-	-	-	-	-
Montana.....	-	-	-	-	-	-	-	-	-	-	-	-
Idaho.....	-	-	-	-	-	-	-	-	-	-	-	-
Wyoming.....	-	-	-	-	-	-	-	-	-	-	-	-
Colorado.....	-	-	-	-	-	-	-	-	-	-	-	-
New Mexico.....	-	-	1	-	-	-	-	-	-	-	-	-
Arizona.....	1	1	-	-	-	-	-	-	-	-	-	-
Utah.....	-	-	-	-	-	-	-	-	-	-	-	-
Nevada.....	-	-	-	-	-	-	-	-	-	-	-	-
PACIFIC.....	12	4	3	1	-	1	-	1	-	1	-	1
Washington.....	-	-	-	-	-	-	-	-	-	-	-	-
Oregon.....	-	-	-	-	-	-	-	-	-	-	-	-
California.....	8	4	1	1	-	1	-	1	-	1	-	1
Alaska.....	-	-	1	-	-	-	-	-	-	-	-	-
Hawaii.....	4	-	1	-	-	-	-	-	-	-	-	-
Puerto Rico	-	-	-	-	-	-	-	-	-	-	-	-

Table 3. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES
FOR WEEKS ENDED
JANUARY 4, 1964 AND JANUARY 5, 1963 (1st WEEK) Continued

Area	Brucellosis		Diphtheria		Infectious Hepatitis including Serum Hepatitis						Typhoid Fever	
		Cum.		Cum.	Total	Under 20 years	20 years and over	Age Unknown	Cumulative			Cum.
	1964	1964	1964	1964	1964	1964	1964	1964	1964	1963	1964	1964
UNITED STATES...	3	3	8	8	598	269	286	43	598	691	2	2
NEW ENGLAND.....	-	-	1	1	91	46	44	1	91	106	-	-
Maine.....	-	-	-	-	40	22	18	-	40	57	-	-
New Hampshire.....	-	-	-	-	13	7	5	1	13	13	-	-
Vermont.....	-	-	-	-	8	6	2	-	8	2	-	-
Massachusetts.....	-	-	1	1	17	7	10	-	17	29	-	-
Rhode Island.....	-	-	-	-	3	1	2	-	3	1	-	-
Connecticut.....	-	-	-	-	10	3	7	-	10	4	-	-
MIDDLE ATLANTIC.....	-	-	3	3	173	88	85	-	173	170	-	-
New York City.....	-	-	1	1	27	10	17	-	27	16	-	-
New York, Up-State.	-	-	-	-	99	53	46	-	99	61	-	-
New Jersey.....	-	-	2	2	13	9	4	-	13	20	-	-
Pennsylvania.....	-	-	-	-	34	16	18	-	34	73	-	-
EAST NORTH CENTRAL...	-	-	-	-	33	13	13	7	33	57	-	-
Ohio.....	-	-	-	-	20	11	7	2	20	18	-	-
Indiana.....	-	-	-	-	-	-	-	-	-	-	-	-
Illinois.....	-	-	-	-	1	-	1	-	1	5	-	-
Michigan.....	-	-	-	-	3	2	1	-	3	32	-	-
Wisconsin.....	-	-	-	-	9	-	4	5	9	2	-	-
WEST NORTH CENTRAL...	2	2	4	4	36	16	16	4	36	34	-	-
Minnesota.....	-	-	-	-	-	-	-	-	-	10	-	-
Iowa.....	-	-	-	-	9	1	8	-	9	8	-	-
Missouri.....	2	2	-	-	4	1	2	1	4	9	-	-
North Dakota.....	-	-	-	-	-	-	-	-	-	1	-	-
South Dakota.....	-	-	-	-	7	3	4	-	7	4	-	-
Nebraska.....	-	-	-	-	6	4	2	-	6	-	-	-
Kansas.....	-	-	4	4	10	7	-	3	10	2	-	-
SOUTH ATLANTIC.....	-	-	-	-	36	13	19	4	36	92	1	1
Delaware.....	-	-	-	-	-	-	-	-	-	1	-	-
Maryland.....	-	-	-	-	6	4	2	-	6	8	-	-
Dist. of Columbia..	-	-	-	-	1	-	1	-	1	3	-	-
Virginia.....	-	-	-	-	4	2	1	1	4	34	-	-
West Virginia.....	-	-	-	-	-	-	-	-	-	13	-	-
North Carolina.....	-	-	-	-	5	3	2	-	5	30	-	-
South Carolina.....	-	-	-	-	-	-	-	-	-	1	1	1
Georgia.....	-	-	-	-	-	-	-	-	-	-	-	-
Florida.....	-	-	-	-	20	4	13	3	20	2	-	-
EAST SOUTH CENTRAL...	-	-	-	-	34	21	13	-	34	78	1	1
Kentucky.....	-	-	-	-	12	6	6	-	12	27	-	-
Tennessee.....	-	-	-	-	14	10	4	-	14	29	1	1
Alabama.....	-	-	-	-	7	5	2	-	7	11	-	-
Mississippi.....	-	-	-	-	1	-	1	-	1	11	-	-
WEST SOUTH CENTRAL...	-	-	-	-	32	22	9	1	32	52	-	-
Arkansas.....	-	-	-	-	5	2	3	-	5	5	-	-
Louisiana.....	-	-	-	-	3	3	-	-	3	6	-	-
Oklahoma.....	-	-	-	-	2	2	-	-	2	2	-	-
Texas.....	-	-	-	-	22	15	6	1	22	39	-	-
MOUNTAIN.....	1	1	-	-	37	8	6	23	37	43	-	-
Montana.....	-	-	-	-	1	-	1	-	1	9	-	-
Idaho.....	-	-	-	-	2	-	-	2	2	8	-	-
Wyoming.....	-	-	-	-	-	-	-	-	-	1	-	-
Colorado.....	-	-	-	-	8	1	2	5	8	5	-	-
New Mexico.....	-	-	-	-	3	1	1	1	3	4	-	-
Arizona.....	-	-	-	-	15	-	-	15	15	9	-	-
Utah.....	1	1	-	-	7	6	1	-	7	4	-	-
Nevada.....	-	-	-	-	1	-	1	-	1	3	-	-
PACIFIC.....	-	-	-	-	126	42	81	3	126	59	-	-
Washington.....	-	-	-	-	27	12	14	1	27	2	-	-
Oregon.....	-	-	-	-	8	3	4	1	8	16	-	-
California.....	-	-	-	-	78	22	56	-	78	39	-	-
Alaska.....	-	-	-	-	9	5	3	1	9	2	-	-
Hawaii.....	-	-	-	-	4	-	4	-	4	-	-	-
Puerto Rico	-	-	-	-	-	-	-	-	-	5	-	-

Table 3. CASES OF SPECIFIED NOTIFIABLE DISEASES: UNITED STATES
FOR WEEKS ENDED
JANUARY 4, 1964 AND JANUARY 5, 1963 (1st WEEK) - Continued

Area	Measles	Meningococcal Meningitis			Streptococcal Sore Throat and Scarlet Fever		Tetanus		Tularemia		Rabies in Animals	
		Cumulative					Cum.		Cum.		Cum.	
	1964	1964	1964	1963	1964	1963	1964	1964	1964	1964	1964	1964
UNITED STATES...	2,938	33	33	46	6,789	5,934	2	2	9	9	48	48
NEW ENGLAND.....	149	2	2	5	570	427	-	-	-	-	-	-
Maine.....	6	-	-	-	60	13	-	-	-	-	-	-
New Hampshire.....	3	-	-	-	1	8	-	-	-	-	-	-
Vermont.....	22	-	-	1	27	30	-	-	-	-	-	-
Massachusetts.....	57	1	1	2	87	98	-	-	-	-	-	-
Rhode Island.....	6	-	-	2	19	42	-	-	-	-	-	-
Connecticut.....	55	1	1	-	376	236	-	-	-	-	-	-
MIDDLE ATLANTIC.....	815	5	5	3	330	261	-	-	-	-	2	2
New York City.....	316	1	1	1	27	20	-	-	-	-	-	-
New York, Up-State.	169	2	2	1	217	149	-	-	-	-	1	1
New Jersey.....	181	1	1	-	60	50	-	-	-	-	-	-
Pennsylvania.....	149	1	1	1	26	42	-	-	-	-	1	1
EAST NORTH CENTRAL...	322	-	-	7	377	542	-	-	1	1	4	4
Ohio.....	94	-	-	2	112	91	-	-	-	-	3	3
Indiana.....	120	-	-	1	51	40	-	-	-	-	1	1
Illinois.....	23	-	-	1	31	66	-	-	-	-	-	-
Michigan.....	21	-	-	2	58	172	-	-	-	-	-	-
Wisconsin.....	64	-	-	1	125	173	-	-	1	1	-	-
WEST NORTH CENTRAL...	59	-	-	2	156	221	-	-	3	3	14	14
Minnesota.....	-	-	-	-	2	-	-	-	-	-	-	-
Iowa.....	17	-	-	-	31	74	-	-	-	-	5	5
Missouri.....	-	-	-	1	2	5	-	-	3	3	4	4
North Dakota.....	41	-	-	-	90	107	-	-	-	-	1	1
South Dakota.....	1	-	-	1	18	3	-	-	-	-	4	4
Nebraska.....	-	-	-	-	1	-	-	-	-	-	-	-
Kansas.....	-	-	-	-	12	32	-	-	-	-	-	-
SOUTH ATLANTIC.....	429	6	6	10	606	562	2	2	-	-	6	6
Delaware.....	-	-	-	-	1	6	-	-	-	-	-	-
Maryland.....	71	-	-	1	24	24	-	-	-	-	-	-
Dist. of Columbia.	10	-	-	1	3	3	-	-	-	-	-	-
Virginia.....	100	-	-	5	251	142	-	-	-	-	6	6
West Virginia.....	174	-	-	2	195	212	-	-	-	-	-	-
North Carolina.....	12	1	1	1	11	23	1	1	-	-	-	-
South Carolina.....	53	2	2	-	59	77	-	-	-	-	-	-
Georgia.....	-	-	-	-	-	-	-	-	-	-	-	-
Florida.....	9	3	3	-	62	75	1	1	-	-	-	-
EAST SOUTH CENTRAL...	527	3	3	3	1,577	1,004	-	-	3	3	14	14
Kentucky.....	361	2	2	1	117	73	-	-	-	-	5	5
Tennessee.....	146	1	1	2	1,219	752	-	-	2	2	8	8
Alabama.....	13	-	-	-	111	52	-	-	1	1	1	1
Mississippi.....	7	-	-	-	130	127	-	-	-	-	-	-
WEST SOUTH CENTRAL...	26	4	4	6	793	1,098	-	-	2	2	7	7
Arkansas.....	25	1	1	-	1	-	-	-	-	-	4	4
Louisiana.....	-	1	1	1	3	5	-	-	-	-	-	-
Oklahoma.....	1	2	2	1	20	4	-	-	2	2	-	-
Texas.....	-	-	-	4	769	1,089	-	-	-	-	3	3
MOUNTAIN.....	191	5	5	4	1,519	1,111	-	-	-	-	-	-
Montana.....	55	-	-	-	59	37	-	-	-	-	-	-
Idaho.....	52	1	1	-	191	123	-	-	-	-	-	-
Wyoming.....	-	-	-	-	33	18	-	-	-	-	-	-
Colorado.....	16	2	2	2	536	381	-	-	-	-	-	-
New Mexico.....	5	2	2	-	307	266	-	-	-	-	-	-
Arizona.....	45	-	-	1	216	154	-	-	-	-	-	-
Utah.....	7	-	-	1	176	115	-	-	-	-	-	-
Nevada.....	11	-	-	-	1	17	-	-	-	-	-	-
PACIFIC.....	420	8	8	6	861	708	-	-	-	-	1	1
Washington.....	99	1	1	-	115	144	-	-	-	-	-	-
Oregon.....	33	-	-	1	22	15	-	-	-	-	-	-
California.....	167	7	7	5	655	538	-	-	-	-	1	1
Alaska.....	119	-	-	-	35	3	-	-	-	-	-	-
Hawaii.....	2	-	-	-	34	8	-	-	-	-	-	-
Puerto Rico	11	-	-	-	-	-	-	-	-	-	-	-

Table 4 (A). TOTAL DEATHS IN REPORTING CITIES

(Tables 4(A), 4(B), 4(C), and 4(D) will be published in sequence covering a four-week period.)[o]

Area	For weeks ending			
	12/14/63	12/21/63	12/28/63	1/4/64
NEW ENGLAND:				
Boston, Mass.	246	256	242	287
Bridgeport, Conn.	37	43	34	57
Cambridge, Mass.	36	34	38	28
Fall River, Mass.	37	26	24	35
Hartford, Conn.	69	51	68	62
Lowell, Mass.	24	17	41	18
Lynn, Mass.	31	21	33	33
New Bedford, Mass.	30	23	42	33
New Haven, Conn.	55	42	60	50
Providence, R.I.	71	61	69	90
Somerville, Mass.	15	13	13	17
Springfield, Mass.	52	41	57	52
Waterbury, Conn.	24	25	32	31
Worcester, Mass.	56	48	60	63
MIDDLE ATLANTIC:				
Albany, N.Y.	45	45	59	40
Allentown, Pa.	34	37	46	36
Buffalo, N.Y.	139	141	144	140
Camden, N.J.	60	44	57	49
Elizabeth, N.J.	34	25	30	44
Erie, Pa.	42	26	52	49
Jersey City, N.J.	88	67	85	79
Newark, N.J.	135	105	119	110
New York City, N.Y.	1,703	1,685	1,904	1,847
Paterson, N.J.	25	38	40	41
Philadelphia, Pa.	481	500	424	597
Pittsburgh, Pa.	233	150	110	218
Reading, Pa.	50	64	55	70
Rochester, N.Y.	103	105	93	98
Schenectady, N.Y.	36	27	35	24
Scranton, Pa.	40	31	40	65
Syracuse, N.Y.	65	61	47	65
Trenton, N.J.	55	40	53	63
Utica, N.Y.	34	31	27	34
Yonkers, N.Y.	45	37	36	40
EAST NORTH CENTRAL:				
Akron, Ohio	73	51	71	60
Canton, Ohio	36	44	44	32
Chicago, Ill.	844	809	859	882
Cincinnati, Ohio	187	121	180	190
Cleveland, Ohio	196	136	164	211
Columbus, Ohio	130	125	152	130
Dayton, Ohio	91	68	83	107
Detroit, Mich.	384	336	403	406
Evansville, Ind.	34	54	45	37
Flint, Mich.	37	60	56	64
Fort Wayne, Ind.	46	53	52	34
Gary, Ind.	35	44	42	37
Grand Rapids, Mich.	68	54	45	45
Indianapolis, Ind.	160	138	130	155
Madison, Wis.	30	38	29	26
Milwaukee, Wis.	130	140	125	130
Peoria, Ill.	29	33	33	27
Rockford, Ill.	34	37	37	32
South Bend, Ind.	41	44	29	39
Toledo, Ohio	110	117	82	123
Youngstown, Ohio	59	48	60	80
WEST NORTH CENTRAL:				
Des Moines, Iowa	53	64	49	66
Duluth, Minn.	25	33	20	20
Kansas City, Kans.	28	34	34	49
Kansas City, Mo.	157	155	144	162
Lincoln, Nebr.	17	22	20	29
Minneapolis, Minn.	132	132	132	158
Omaha, Nebr.	63	54	82	56
St. Louis, Mo.	279	276	235	291
St. Paul, Minn.	81	66	106	61
Wichita, Kans.	47	39	38	50*

*Estimate - based on average percent of divisional total.
Totals for previous weeks include reported corrections.

NOTE: All deaths by place of occurrence.

Area	For weeks ending			
	12/14/63	12/21/63	12/28/63	1/4/64
SOUTH ATLANTIC:				
Atlanta, Ga.	132	136	92	125
Baltimore, Md.	285	271	250	310
Charlotte, N.C.	53	42	14	61
Jacksonville, Fla.	74	61	68	123
Miami, Fla.	109	87	75	109
Norfolk, Va.	51	60	39	70*
Richmond, Va.	77	120	95	107
Savannah, Ga.	30	32	50	30
St. Petersburg, Fla.	75	84	82	97
Tampa, Fla.	61	82	82	104
Washington, D.C.	204	199	207	253
Wilmington, Del.	52	30	32	66
EAST SOUTH CENTRAL:				
Birmingham, Ala.	107	86	60	129
Chattanooga, Tenn.	52	55	29	30
Knoxville, Tenn.	46	41	28	46
Louisville, Ky.	126	114	74	85
Memphis, Tenn.	108	140	64	131
Mobile, Ala.	70	53	43	61
Montgomery, Ala.	48	38	19	36
Nashville, Tenn.	108	102	63	103
WEST SOUTH CENTRAL:				
Austin, Tex.	50	37	35	59
Baton Rouge, La.	44	27	20	42
Corpus Christi, Tex.	31	21	27	23
Dallas, Tex.	126	157	129	142
El Paso, Tex.	55	39	33	30
Fort Worth, Tex.	82	75	72	98
Houston, Tex.	203	192	146	212
Little Rock, Ark.	79	70	52	62
New Orleans, La.	175	195	223	244
Oklahoma City, Okla.	81	82	80	89
San Antonio, Tex.	111	107	127	142
Shreveport, La.	71	54	35	62
Tulsa, Okla.	52	37	73	75
MOUNTAIN:				
Albuquerque, N. Mex.	21	33	41	48
Colorado Springs, Colo.	25	26	17	24
Denver, Colo.	133	139	79	156
Ogden, Utah	12	15	18	13
Phoenix, Ariz.	106	80	101	117
Pueblo, Colo.	18	20	15	22
Salt Lake City, Utah	45	64	50	54
Tucson, Ariz.	54	55	45	49
PACIFIC:				
Berkeley, Calif.	17	17	20	24
Fresno, Calif.	47	69	74	48
Glendale, Calif.	38	38	38	44
Honolulu, Hawaii	44	48	36	45
Long Beach, Calif.	83	69	70	73
Los Angeles, Calif.	554	592	441	557
Oakland, Calif.	104	92	88	78
Pasadena, Calif.	34	42	40	40
Portland, Oreg.	114	109	48	122
Sacramento, Calif.	71	74	58	73
San Diego, Calif.	120	92	79	94
San Francisco, Calif.	216	231	231	210
San Jose, Calif.	32	41	27	44
Seattle, Wash.	139	154	120	144
Spokane, Wash.	56	62	41	44
Tacoma, Wash.	37	48	40	41
San Juan, P.R.	(---)	(---)	(---)	(---)

[o]Current Week Mortality for 108 Selected Cities

4(A) Total Mortality, all ages	13,148
4(B) Pneumonia-Influenza Deaths, all ages	623
4(C) Total Deaths under 1 Year of Age	733
4(D) Total Deaths, Persons 65 years and over	7,523

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INTERNATIONAL NOTES – QUARANTINE MEASURES

Botulism – Canada

Two cases, one fatal, of botulism Type E have been reported from British Columbia.

On September 16, a married couple ate putrefied salmon eggs. A few hours later, during the evening of the day of ingestion, both experienced abdominal pains, vomiting, and increasing generalized weakness. They experienced dizziness and difficulty in speech.

The wife died about 24 hours after the meal. Her widower then was rushed to a hospital for treatment. Botulinus antitoxin Type E was administered intravenously. Thereafter, the patient's generalized weakness slowly improved, although his blood pressure remained low for several days.

The putrefied salmon eggs had been prepared according to methods traditional among Indians of that region. Such salmon eggs are prepared in various ways as salmon egg "cheese" or "stink eggs." The eggs may be simply left to ferment in a jar for several days in their own juice, perhaps diluted with water, or may be put through a very unsanitary ritual of washing, kneading, and maturation, until in a few weeks they form a tenacious, evil-smelling mass. Because the eggs provide an excellent medium for toxigenesis, very small amounts may be lethal.

The salmon eggs not consumed at the meal had been discarded to the garbage dump; a sample was retrieved. This sample of the salmon eggs, as well as a portion of the wife's stomach taken at autopsy, and gastric washings from the hospitalized husband, were submitted for laboratory tests for botulism. All 3 specimens revealed Type E botulinus toxin. The titer in the salmon eggs was unusually high (1,000-3,000 mouse minimum lethal doses per gram of eggs). A toxigenic strain of *Clostridium botulinum* Type E was isolated from these eggs, as well as from the stomach washings and the stomach contents of the two patients.

(Reported by Dr. C. E. Dolman, Professor and Head, Department of Bacteriology and Immunology, University of British Columbia, in Epidemiological Bulletin of the Canadian Department of National Health & Welfare in October 1963, and E. W. R. Best, M.D., Chief, Epidemiology Division, Canada Department of National Health & Welfare.)

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In addition to the established procedures for reporting morbidity and mortality, the Communicable Disease Center welcomes accounts of interesting outbreaks or cases. Such accounts should be addressed to:

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Notes: These provisional data are based on weekly telegrams to the Communicable Disease Center by the individual State health departments.
Symbols: ... Data not available
– Quantity zero
Procedures for construction of various mortality curves may be obtained from Statistics Section, Communicable Disease Center, Public Health Service, U. S. Department of Health, Education, and Welfare, Atlanta, Georgia 30333.

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